FIRAT UNIVERSITY FACULTY VETERINARY MEDICINE BIOSECURITY GUIDELINE

FIRAT UNIVERSITY VETERINARY FACULTY
BIOSECURITY COMMITTEE

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TABLE OF CONTENTS

CHAPTER 1: STANDARD BIOSECURITY PRINCIPLES AND PROCEDURES

1.1 General information

Description

Biosecurity, in general terms, refers to the measures taken and policies implemented to ensure protection from biological risks that may threaten humans, animals and nature. However, different international organisations define biosecurity in different ways according to their specific priorities. Each of these definitions provides a perspective that enables biosecurity to be addressed more comprehensively:

- **The World Health Organisation (WHO)** defines biosecurity as the principles, technologies and practices of protection to prevent the unintentional exposure or spread of humans to pathogens and toxins
- **The World Organisation for Animal Health (OIE)** defines biosecurity as the implementation of measures to reduce the risk of transmission and spread of disease agents and to take effective measures to reduce risk in all activities involving domestic animals, exotic and wild birds and their products by humans
- **The World Food and Agriculture Organisation (FAO)** described biosecurity as a strategy and integrated approach based on risk analysis of food safety, animal and plant health and environmental hazards and their management

These different definitions show that biosecurity is not limited to a specific area, but requires a multidisciplinary approach to protect the health of humans, animals and the environment.

The purpose of biosecurity

Biosecurity defines the prevention and control of infections in areas such as health services, research laboratories and animal hospitals. It is seen that infection prevention and control practices in veterinary medicine services are not sufficiently defined. However, it is clear that it is not possible to provide a quality hospital service without infection control procedures. The procedures applied in veterinary faculties are aimed at minimising the risks of nosocomial (hospital-acquired infections) and zoonotic (transmissible from animals to humans) diseases. The biosecurity principles applied in these faculties may vary according to the procedures for the prevention and control of local infectious diseases, so that the most effective measures can be taken, taking into account regional characteristics.

Objectives of the biosecurity programme

The main objective of the biosecurity programme is to reduce the risk of infection by protecting both humans and animals in healthcare settings. The objectives of this programme can be summarised as follows:

a) **Protection from zoonotic disease agents:** It aims to protect different groups, such as hospital staff, students and patient owners, against disease agents that can be transmitted from animals to humans.
b) **Providing a safe and clean environment:** Providing a safe and clean environment to minimise the risk of nosocomial infection.

c) **Providing education:** Providing comprehensive training to students and healthcare professionals on infection prevention, control and disease surveillance methods aims to increase their knowledge and practical skills in this field.

d) **Information:** To raise awareness of patient owners and the general public about the prevention and protection of infectious diseases in animals and humans.

e) **Ensuring the continuity of quality service:** To sustain the ability of institutions such as faculties and hospitals to provide quality services, thus creating a long-term atmosphere of trust and reliability.

Infection prevention and control principles

The following principles will guide the development of all procedures described in this document. In the context of biosecurity programmes, the main principles for the development of procedures to prevent the spread of diseases are the following:

- **Optimising standard precautions:** Rigorous implementation of hygiene measures such as hand washing, wearing appropriate protective clothing, minimal contact with patients, proper disposal of infectious material, effective cleaning and disinfection practices
- **Effective use of hygiene protocols:** Breaking the chains of transmission by understanding how diseases are transmitted and using hygiene protocols effectively
- **Improvement of infection control procedures:** To continuously improve infection protection and control procedures based on information obtained from monitoring, follow-up and surveillance activities in the hospital
- **Education and awareness raising:** Increase education and awareness among all interested parties, through good communication about the risks of zoonotic and hospital-acquired diseases

Definitions

Antiseptic: Substances that can be applied to living surfaces and used to neutralise or destroy microorganisms with chemical substances.

Disinfectant: Chemical substances that kill or prevent the growth of microorganisms on inanimate surfaces.

Infectious disease: A disease spread by agents such as bacteria, viruses and parasites.

Disinfection: Physical (heat, ultraviolet light, etc.) or chemical (with disinfectants) processes used to destroy microorganisms (usually does not affect spores) on inanimate surfaces or objects.

Sterilisation: Processes that eliminate all microorganisms (including bacterial spores) on an inanimate object.

Hospital specific clothes: Clothes such as gowns, boots, overalls used in the faculty or during field work.

Antibacterial resistance: The inability of bacteria or other microorganisms to be affected by antibiotics even when used in effective doses.

Nosocomial (hospital acquired) infection: A local or generalised infection caused by infectious agents or toxins acquired in hospital (within 48 hours of admission) that were not present when the patient was brought to hospital.

Personnel protective equipment: Protective equipment used by personnel to prevent exposure to microorganisms, diseases or harmful chemicals. Examples of these are gloves, aprons, masks, eye protection apparatus, overshoes.

Sanitiser: Chemical substances that can reduce the number of microorganisms to a safe level but cannot destroy all microorganisms.

Subclinical infection: It is an infection caused by microorganisms in the body but does not show any signs or clinical symptoms. Subclinical infection can also be an early stage of an infectious disease or a very mild form of an infectious disease with no obvious symptoms.

Staff: It defines all individuals working in the veterinary faculty such as academicians, students, workers, visitors, volunteers.

Zoonosis: Diseases that can be transmitted from animals to humans and from humans to animals.

Preventive actions: Some parameters for determining the clinical status of patients admitted to hospital against the risk of an infectious infection are presented in Table 1.

Table 1. Some parameters used to determine the infection status

Species	Fire (Rectal temperature)	Leucopenia (cell X 10 /ml^3	Neutropenia (cell X 10^3 /ml)
At	>38,5 °C	<4,0	<2.5
Cattle	>39,5 °C	<5,0	<0,6
Dog	>39,5 °C	<6,0	<3,0
Cat	>39,5 °C	<5,0	<2,0
Sheep	>40,0 °C	<4,0	<0,7
Goat	>40,5 °C	<4,0	<1,2

1.2. Classification of risk categories

Specific diseases for each species are listed under the relevant hospital services. Infectious diseases in hospitalised animals were categorised according to the risk of transmission of these agents to other animals and/or their zoonotic (animal-to-human) potential (Table 2).

Table 2. Risk Categories in Infectious Diseases

Class 1	Diseases caused by agents that have no risk of transmission from animals to humans or from humans to animals and do not carry a risk in humans.
Class 2	Diseases caused by microorganisms causing bacterial infections with low infectious risk and no resistance
Class 3 (Personal Protective Equipment)	Diseases caused by microorganisms that cause serious illness or epidemics in animals.
Class 4 (Isolation)	Diseases caused by microorganisms that cause very serious pandemics and epidemics, as well as very high mortality rates and dramatic economic losses in animals in affected areas

1.2. General Rules

1.2.1. Hand washing

Hand washing is vital in controlling infections and significantly reduces the transmission of microorganisms**.**

Situations where hands should be washed;

- Before and after contact with the patient
- Immediately after removing the gloves
- After contact with biological materials, whether or not gloves are worn
- After touching different areas of the same patient, before each separate procedure to avoid cross-contamination
- After cleaning of animal examination rooms, cages and paddocks
- Meals, breaks, smoking breaks and before leaving work at the end of the day
- Hands should be washed before and after using the toilet

Recommended method for hand washing;

- Hands and wrists are washed with warm water
- Put at least 3-5 ml (about 1-2 pumps) of soap in the palm of your hand
- The soap is lathered so that it reaches all parts of the hand and the hands are washed by rubbing thoroughly for about 30 seconds.
- All soap residues are removed using warm water
- Hands are dried using paper towels or air drying
- If hand washing is not possible, alcohol wipes or hand sanitiser can be used until water and soap are available

Recommended method for the use of hand sanitiser

- Pour the disinfectant into the palm of the hand the size of a thumb nail

- The disinfectant is rubbed between the fingers of both hands, then the same procedure is applied to the back of the hand
- Hands are rubbed until the disinfectant dries; hands are not washed or dried during this process
- Staff and students should have short nails and no jewellery on their hands

1.2.2. Taking personal protective measures

The taking of personal protective measures must be tailored to the operations performed and the risks involved. These measures must be applied as follows:

- Gloves and protective clothing (e.g. apron, overalls) should be worn when in contact with patients known or suspected to be infectious or zoonotic (risk category 3 or 4)
- In cases of potential contact with blood or other body fluids, gloves should be worn, as well as surgical masks and protective goggles
- If the gloves are worn or torn, they should be replaced with new gloves.
- Washable boots, shoes or overshoes should be worn in the hospital to prevent the spread of infectious materials
- Depending on the situation and the type of disease, additional measures should be taken to protect the face and prevent respiratory transmission

1.2.3. Standard clothes

Fırat University Faculty of Veterinary Medicine implements a professional dress code system within the framework of biosecurity measures:

Blue clinical clothing is required for academic staff and students working in Surgery and Obstetrics and Gynaecology clinics and green clinical clothing is required for Internal Medicine and Fertilisation and Artificial Insemination clinics.

- Those working in small animal clinics must wear a **white** coat
- Everyone working in laboratories must wear a **white** lab coat
- In isolation departments, all faculty staff should wear yellow lab coats or **disposable** aprons
- **Grey** clothing is compulsory for technical and support staff
- It is essential that the clothing used within the faculty is used only in the relevant areas to prevent the transfer of pathogens to external environments
- All staff and students caring for patients or in these areas should be encouraged to wear the prescribed clothing and should not be permitted to wear it elsewhere
- All staff and students are required to wear boots, especially in Single Hoofed and Farm Animal Clinics
- Employees working in the Cat and Dog Clinic must wear closed shoes suitable for disinfection. These shoes and boots must be washed and disinfected
- Long-haired staff and students working in clinics should wear bonnets to cover their hair
- At least one set of spare protective equipment must be available at all times
- Students must wear clean clothes for each rotation

- Staff and students in both the Small Animal and Large Animal Clinics must be appropriately dressed when entering different areas of the hospital
- Hospital special clothes should be displayed with posters in the relevant places of the hospital

1.2.4. Patient care

1.2.4.1. Patient hygiene

In Fırat University Faculty of Veterinary Medicine, in order to reduce the risk of infection and to ensure basic hygiene standards, it is of great importance that patients are kept in clean cages or shelters as much as possible. In this context

- Feeders and drinkers should be kept clean
- When sick animals defecate or urinate, the waste must be removed immediately
- It is essential that the environment is clean and tidy. In this context, no drugs or foreign materials should be kept in the environment and there should be no sitting areas (benches, chairs, etc.). All staff and students must leave the materials they use in an organised and clean manner
- If there are special requirements for patient hygiene in all parts of the hospital, these requirements must be clearly stated in the relevant places

1.2.4.2. Minimising contact with patients

In Fırat University Faculty of Veterinary Medicine, it is inevitable for the personnel to come into contact with patients during the execution of hospital services and education of students. Considering this situation, the measures to be taken to reduce the risk of exposure to nosocomial infections are as follows:

- Staff and students should limit their contact with patients as much as possible
- Clinicians can ensure that students' contact with animals for educational purposes is controlled and guided
- Contact with sick animals known or suspected to be infected with infectious agents should be restricted to relevant staff and students
- Where possible, it may be preferable to monitor patients by means of cameras at the site of the physical examination
- In order to prevent the spread of infectious agents, the movement of staff and students between clinics should be minimised

- Contact with patients known or suspected to be infected with infectious agents should only be permitted to relevant staff and students who have been informed about the issue
- Staff and students should not enter animal shelters, touch or pet animals unless necessary
- Where possible, ensure that staff and students work in areas free from contamination risk

1.2.5. Food and beverages

- Food and drink must not be allowed to be kept or consumed in areas where animals are examined, treated or housed
- Staff and students should refrain from eating and drinking in areas where biological materials and medicines are stored. This includes places such as registration rooms, corridors, surgical laboratories, examination rooms and waiting areas
- Food and beverages are allowed to be kept and consumed in cafeterias, kitchens, on-duty technical staff rooms
- Animals, biological materials and medicines must never be allowed in areas where eating and drinking are permitted
- It is forbidden to have food and beverages in a refrigerator or freezer where biological samples and medicines are stored

1.2.5.1. Faculty cafeteria

- Faculty staff and students are not allowed to enter the cafeterias with their work clothes (clinical clothes, lab coats, boots, aprons, etc.)
- It is important that cafeteria staff understand how these hygiene rules should be applied by staff and students and act accordingly
- Animals must not be allowed in cafeterias

1.2.6. Medicines

Storage and supply

- Medicines should be stored in a clean and controllable environment, protected from light, moisture and excessive heat
- Medicines should be organised alphabetically or by other classifications
- Opened medicines should be stored tightly closed and in a separate environment
- Drug storage areas should be out of easy reach of people, especially children and animals
- Drugs requiring high security (such as opiate narcotics, general anaesthetics, sedative drugs) should be locked and only accessible to authorised clinicians

Expiry time

- All medicines, including liquids, must be labelled with a water-resistant pen with the date on which they were opened or their sterility was compromised
- Unless otherwise stated in the package insert, medicines whose expiry date exceeds 24 hours must be destroyed for safety reasons

Preparation of medicines

The following steps should be followed for the correct and safe preparation of medicines:

- Preparation of medicines should be carried out by clinicians or authorised persons under their direction
- When preparing medicines, care should be taken to avoid possible contamination and contamination risks with other medicines
- Rubber caps of injectable medicines should be disinfected by wiping with alcohol before puncture with a needle
- For each drug administration, a sterile needle/injector must be used for each drug and each animal to avoid cross-contamination
- Toxic and dangerous medicines should be prepared by taking appropriate safety precautions. In this process, protective equipment such as gloves should be used and safe environments such as fume cupboards should be preferred
- The relevant records must be entered into the automation system immediately after the medicines are used or prepared
- Some medicines (e.g. penicillin sodium, ampicillin) should be prepared on an as-needed basis as they are not stable
- If a medicine is not to be used immediately, the name of the medicine must be clearly written on the syringe with an indelible pen

Recycling of medicines

- Expired or obsolete medicines should not be returned to the pharmacy and should be disposed of safely using special waste bags designed for the disposal of such medicines

1.2.7. Cleaning services

1.2.7.1. General provisions

- Firstly, cutting tools should be thrown into special containers, then the protective clothing used should be removed, tools and equipment should be left to the relevant places for cleaning and disinfection.
- Before the tools and equipment are sent to the disinfection unit, the biological materials on them must be cleaned
- Laundry services cannot be used for washing personal clothes, such as belongings of patients or patients' owners and student gowns

1.2.8. Removal of waste

- Each department should keep a separate file on waste. This is necessary for monitoring and auditing waste management
- Necessary safety precautions must be taken to prevent injury from needles or other sharps. Staff and students should stay away from risk materials such as used needles, intentionally bent or broken needles and discarded disposable syringes. Tear-resistant containers should be used for disposal of sharps

- General hospital waste that is not suspected of zoonosis or does not contain highly infectious substances should be disposed of in household waste (black) bags
- Animal wastes carrying infectious agents must be disposed of in medical waste bags. All waste from the isolation unit must be disposed of in medical waste bins
- Biological samples of patients at risk of infectious diseases should be well sealed, placed in sealed sample bags and sent to the diagnostic laboratory with the necessary information written on it. When placing the samples in the bags, contamination outside the bags must be prevented
- Treatment and bandaging of wounds known to be infected should be carried out in a place where people and animals are not concentrated and can be easily cleaned and disinfected.
- Biological samples or parts of dead animals (hair, feet, skeletons, etc.) must not be kept in the hospital except for medical purposes and disposal

1.3. General cleaning and disinfection

- Faculty staff and students should have knowledge about the different chemicals used in general cleaning and disinfection
- Organic material inactivates most disinfectants. For this reason, organic materials that are likely to be on the surfaces should be taken into consideration when choosing disinfectants
- The spectrum of action of disinfectants is quite different. In general, protozoa such as Cryptosporidium, bacterial spores, mycobacteria and membrane-less viruses are very resistant to disinfection
- To ensure proper decontamination, disinfection solutions must be applied at sufficient concentrations and for sufficient time (at least 10-15 min).
- It should be noted that some disinfectants can leave a long-lasting residue
- In cases of consecutive disinfectant use, the previous disinfectant residues must be washed and removed

1.3.1. Proper cleaning

General cleaning and disinfection protocol

- Appropriate clothing should be worn when using disinfectants. In addition, personnel should wear protective equipment (masks, face protection, clothing and footwear)
- All visible dirt should be removed before disinfection. This is because visible dirt can counteract the effect of most disinfectants. If washing with a hose, precautions should be taken to prevent splashes and aerosol contamination of possible infectious agents
- Washing, brushing or mechanical cleaning of soiled/contaminated areas with water and detergent breaks down the film and dirt residues that inhibit disinfection processes

- The cleaned area must be removed from detergents. Because some detergents inactivate disinfectants and therefore rinsing is very important after washing the area
- Removal or drying of liquids in the area is very important to prevent dilution of disinfectants
- The area is thoroughly wetted with disinfectants. Especially if infectious agents are suspected, the disinfectant is allowed to contact for 15 minutes.
- Excess disinfectant is removed with water, paper towel, mop or squeegee
- Disinfectants on all surfaces should be rinsed and dried before a new patient is placed in paddocks and cages
- Animal examination and treatment areas (examination rooms, tables, etc.) should be cleaned and disinfected by staff and students immediately after use.
- While carrying out these procedures, contact of damaged skin and/or mucous membranes with blood and body fluids should be prevented
- After disinfection, protective clothing should be removed and hands washed.
- Special (non-routine) disinfection procedures should only be carried out by trained personnel

1.3.2. Disinfectants

Many disinfectants are used to prevent the transmission of infectious agents. Various factors play a decisive role in their selection. Summary information about detergents and disinfectants is given in Table 3 below.

- The toxicity of disinfectants in humans and animals is different. In general, alcohols, povidone iodine and chlorhexidine solutions are used when contact with skin and other tissues is required. Other cleaning and disinfection agents (hypochlorite, phenols, quaternary ammonium compounds) are used for equipment and surface disinfection
- While disinfectants provide the expected effects on clean and smooth surfaces, it should be known that they cannot provide adequate disinfection on surfaces containing wood materials, dirty, oily, biofilmed and biological materials

1.3.3. Foot baths/mats

Foot baths and mats are an important method of preventing the spread of infectious agents that may be present in large quantities on floors in areas where infected animals are present. In order for this method to be effective, the following practices must be carried out:

- Foot baths must be changed daily by the staff
- Foot baths should also be replaced during the day if the liquid in them is low or excessively dirty. Foot mats should be replaced as soon as they are free of moisture and dry.
- When using foot baths and mats, it is not necessary to bury the entire foot in the bath or mat; these tools are primarily intended for disinfecting the soles and edges of shoes

- These replacement and maintenance procedures are the responsibility of all staff and students in the work area and everyone should be encouraged to follow these rules

1.3.4. Disinfection protocol for tools and equipment

In the hospital environment, all equipment must be carefully cleaned and disinfected before use and before being placed in place to minimise the risk of the spread of infectious disease agents

Thermometers

- In the hospital, electronic thermometers are used instead of glass thermometers due to breakage and mercury exposure
- Electronic thermometers are generally cleaned after each use and kept in alcohol or chlorhexidine solutions
- Thermometer probes used in situations requiring continuous temperature monitoring, such as anaesthesia, are wiped to prevent contamination, faecal material is removed and disinfected with alcohol/chlorhexidine solutions
- In high-risk patients (class 3 and class 4) individual thermometers are used and then cleaned and disinfected

Endoscopes

- Endoscopes must be cleaned and disinfected with chlorhexidine/benzalkonium after each use
- Endoscopes should only be cleaned and disinfected by the faculty staff in charge

Stethoscopes

- Regular cleaning of stethoscopes with soap and water and disinfection with hand sanitiser is recommended
- Individual stethoscopes should be used in high-risk patients (Class 4) and should be cleaned and disinfected after use

1.3.5. Detergents and disinfectants approved for use in the veterinary faculty

The selection of detergents and disinfectants approved for use in veterinary faculties was made from substances approved by international organisations. This aims to protect both human and animal health. These approved substances are divided into various lists according to their area of use, which include veterinary hygiene, products used in direct contact with food and substances used in public health. This division has been made to ensure that the most effective and safe disinfection methods are applied, taking into account the specific needs and requirements of each area concerned.

Table 3. Basic antiseptics/disinfectants foreseen to be used in veterinary medicine.

Disinfectants and Dilutions	Impact Spectrum	Recommendations
Chlorhexidine • Disinfection of objects in contact with skin or mucous membranes (e.g. thermometers, endotracheal tubes) • Available in 0.5, 2, 4 per cent solutions in water or alcohol • Contact time is at least 15 minutes • The effect decreases rapidly in contact with organic material	Mycoplasma Very effective Mycobacteria: Variable Gram (+) Bacteria: Very effective Gram (-) Bacteria: Very effective Pseudomonas: Limited effective Rickettsia: Limited effective Enveloped Viruses: Limited effective Chlamydia: Limited effective Non-enveloped Viruses Ineffective Fungal Spores Limited efficacy Bacteria Spores Ineffective Cryptosporidia: Ineffective Prion: Ineffective	• Broad antibacterial spectrum but limited activity against viruses • Used for disinfecting materials (endotracheal tube, etc.) that patients come into close contact with • Soap and detergents quickly wear off • It has a low toxic potential and is not irritating even when in contact with mucous membranes in normal dilutions. Inactivated by anionic detergents • Bactericidal activity on the skin is very fast • Lasting effect on the skin reduces regrowth • Functions only at limited pH (5-7) • Poisonous to fish, should not be thrown into the environment
Povidone Iodine • Used for skin decontamination and disinfection (e.g. preparation of the operation site) • The effect decreases rapidly in contact with organic material	Mycoplasma Very effective Mycobacteria: Limited Effect Gram (+) Bacteria: Effective Gram- Bacteria: Effective Pseudomonas Effective Rickettsia: Effective Enveloped Viruses Effective Chlamydia: Effective Non-Enveloped Viruses: Limited Effective Fungal Spores: Effective Bacteria Spores Effective Cryptosporidia: Ineffective Prion: Ineffective	• Broad spectrum • Low toxic potential • Properly diluted solutions are suitable for use on tissues or substances in contact with skin or mucous membranes • People can be sensitised by skin contact • Dilution of iodophores increases free iodine concentration and antimicrobial activity • Staining of tissues and plastic may occur • Stable in warehouses • Inactivated by organic residues and faeces • Requires frequent application • Corrosive
Alcohol • used as 90% isopropanol or 70% ethanol • Used to disinfect materials that personnel come into contact with (tools, hand sanitiser, etc.) • Reduced effect in contact with organic material	Mycoplasma Very effective Mycobacteria: Effective Gram+ bacteria: Very effective Gram- Bacteria: Very effective Pseudomonas Effective Rickettsia: Limited Effect Enveloped Viruses Effective Chlamydia: Limited Effect	• Broad spectrum • Very low toxic potential • Appropriately diluted solutions are suitable for materials in contact with tissues or skin or mucous membranes • No permanent activity on surfaces • Fast acting • Leaves no residue • Fast evaporation

	Non-enveloped Viruses Ineffective Fungal Spores Limited Effect Bacteria Spores Ineffective Cryptosporidia: Ineffective Prion: Ineffective	• Highly flammable
Sodium Hypochlorite (Bleach) • Used for disinfection of clean surfaces, especially to increase the activity of the disinfectant • The effect decreases rapidly in contact with organic material • Dilutions For normal effect 1:64 (6 ml per 1 L of water), 1:32 for medium effect (12 ml per 1 L water) 1:10 (100 ml per 1 L water) for strong effect	Mycoplasma Very effective Mycobacteria: Effective Gram+ Bacteria: Effective Gram- Bacteria: Effective Pseudomonas Effective Rickettsia: Effective Enveloped Viruses Effective Chlamydia: Effective Non-enveloped Viruses: Effective at high concentrations Fungal Spores Effective Bacteria Spores Effective Cryptosporidia: Ineffective Prion: Ineffective	• Broad spectrum • Relatively low toxicity potential with standard dilution, but higher concentrations or prolonged contact may cause irritation to mucous membranes or skin • Can be used in the presence of anionic detergents; not affected by water hardness • Cheap • Bactericidal activity decreases with increasing pH, low temperature and in the presence of ammonia and nitrogen, which is important in the presence of urine. Cationic soap/detergents are also inactivated by sunlight and some metals • Chlorine gas can be produced when mixed with other chemicals. Strong oxidising (bleaching) activity which can damage fabric and is corrosive on ribbon and aluminium (not stainless steel) metals • Limited stability in storage
Quaternary ammonium compounds • Primary surface disinfectant used (spot disinfection and general disinfection) • Contact time at least 15 minutes • Moderate reduction of the effect in contact with organic material	Mycoplasma Effective Mycobacteria: Variable Gram+ bacteria: Very effective Gram- Bacteria: Effective Pseudomonas Ineffective Rickettsia: Limited effective Enveloped Viruses Effective Chlamydia: Ineffective Non-enveloped Viruses Limited impact Fungal Spores Limited efficacy Bacteria Spores Ineffective Cryptosporidia: Ineffective Prion: Ineffective	• Although irritation and toxicity vary between products, these compounds are generally non-irritating and have low toxicity in typical dilutions • Passivated with anionic detergents • Some residual activity after drying • More effective at alkaline pH • Less effective in cold weather • Stable in the storage area. • Inactivated by hard water • Inactivated by soap / detergents (e.g. bleach)

Oxidising Agents • Hydrogen peroxide is used in all foot baths disinfected in the large animal clinic and in disinfectant misting (fogging). • The effect in contact with organic material is variable and very good for hydrogen peroxide • Dilution: 10 grams per 1 litre of water • Contact time at least 15 minutes	Mycoplasma Very Effective Mycobacteria: Effective Gram+ Bacteria: Effective Gram- Bacteria: Effective Pseudomonas Effective Rickettsia: Effective Enveloped Viruses Effective Chlamydia: Effective Non-Enveloped Viruses: Limited Impact Fungal Spores Limited Effect Bacteria Spores Effective Cryptosporidia: Limited Effect Prion: Ineffective	• Broad spectrum • The listed products have a very low toxic potential, but may cause skin irritation by drying, especially in powder or concentrated solutions • No harmful decomposition products • Residual activity on surfaces • Poor lipid solubility • Less active at low temperatures • Corrosive with plain steel, iron, copper, brass, bronze and vinyl • Add powder to water to aid mixing
Phenols • Used only for disinfection of instruments and autopsies that may be contaminated with prions • Very good effect in contact with organic material	Mycoplasma Very Effective Mycobacteria: Variable Gram+ Bacteria: Very Effective Gram- Bacteria: Very Effective Pseudomonas Very Effective Rickettsia: Effective Enveloped Viruses Effective Chlamydia: Limited effective Non-enveloped Viruses Limited impact Fungal Spores Effective Bacteria Spores Ineffective Cryptosporidia: Ineffective Prion: Among the compounds variable, limited effect	• Broad spectrum • Irritation potential varies between compounds in this class, but phenolic disinfectant products should generally not be used on surfaces that come into contact with skin or mucous membranes • Concentrations above 2 % are highly toxic to animals, especially cats • The effect is not affected by water hardness • Some residual activity after drying • Effective in a wide pH range • Non-corrosive • Stable in the storage area

1.3.6. Breaking the transmission cycle

Standardised procedures for breaking the chain of infection and visitor rules for veterinary faculties aim to make hospital and educational institution areas safe for both humans and animals. These procedures and rules have been carefully designed to reduce the risk of infection and to safeguard the health of visitors and staff, as well as animals under treatment. The basic rules are listed below:

1.3.7. General rules

- Smoking is strictly prohibited in work areas
- Dogs must be kept on a leash and muzzle and cats must be kept in a transport cage within the Faculty boundaries.
- University employees and students are prohibited from bringing their pets to the faculty and hospital areas unless there is a medical necessity

1.3.8. Rules for visitors to the veterinary faculty

Raising public awareness of the role of veterinarians is one of the main tasks of the faculty and to this end visitors are provided with the opportunity to present information. However, there are potential hazards to the health of visitors due to the risk of exposure to infectious infectious agents in the hospital environment.

- Visitors should be supervised during their stay at the faculty and should not be allowed to come into contact with patients other than their own animals. Group visits should be organised under the coordination of the faculty management and should be supported by a tour accompanied by experienced staff.
- Visitors are strictly forbidden to enter the isolation areas
- Faculty staff should inform visitors in detail about the possible risks of zoonotic (animal-to-human) and nosocomial (hospital acquired) diseases. Normal visitors should not be allowed to enter anaesthesia rooms, emergency department areas and surgical units
- Professional visitors, such as scientists or veterinarians, may be granted special permits by the hospital authorities
- Visitors should not be allowed in areas where animals are present
- Visitors must be allowed to eat, drink and smoke only in authorised places
- Visitors should not be allowed to come to the faculty with their pets such as cats and dogs except for examination and treatment

1.3.9. Rules for patient owners at the faculty

- Patient owners may enter public areas such as waiting rooms, toilets, library and cafeteria. However, they may only be accompanied by faculty staff or students in closed places outside these areas
- The biosecurity authority may limit access to treatment areas at risk of zoonotic and nosocomial infections. Clinicians may exclude patient owners for reasons of safety or to avoid disruption of the treatment process

- The owner may be present during the initial examination, but is prohibited from entering the treatment and patient care areas. Owners must be informed that they are not allowed to touch other animals
- Owners should not be allowed to visit their animals in isolation. Authorisations may be specially granted in cases of euthanasia and agony
- Patient owners should be informed with visuals about taking preventive medicine measures
- Visiting hours are determined by the hospital management with the approval of the physician.
- Clinicians responsible for patient treatment should inform patient owners about the risk of zoonotic and nosocomial diseases

1.3.10. Rules for children at the faculty

- Due to the special safety and health risks around the faculty, it is unacceptable for children to become ill or injured in the faculty environment
- Biosecurity staff may limit children's access to areas with zoonotic disease risks. Children under 18 years of age may be excluded from the area on the advice of clinicians for safety and protection of the working environment
- Young children of hospital staff and students may only be in the hospital under adult supervision
- Visiting children are not allowed to touch animals other than their own. This is particularly important to minimise the risk of zoonotic diseases and physical injury

1.3.11. Rules for pet animals at the faculty

- According to faculty policies, non-patient animals cannot be allowed in the clinics. This rule is vital to reduce the risks of infection and ensure the safety of both animals and humans
- Animals are not allowed in the faculty except for disease treatment, research projects and educational purposes. Even in these cases, contact between healthy and sick animals must be avoided and they must be kept in separate areas
- Staff and students must comply with the hospital rules in their contact with and handling of animals in the hospital.
- Pets are not allowed in areas such as staff offices, classrooms and canteens, except for educational purposes

1.3.12. Ways of disease transmission

- Most disease agents can survive for a long time in the air, on surfaces and in organic materials
- Disease agents can be transmitted from animal to animal, from animal to human or even from human to animal by inhalation, through the mouth, by contact with the mucous membranes of the nose or eyes, and by direct contact with vectors/fomites
- Knowledge of these transmission routes is very important in reducing the potential effects of diseases

1.3.12.1. Aerosol contamination

- Transmission by this route occurs when infectious agents that are transmitted between susceptible species are present in the breathing air. The greater the distances between animals, the lower the risk of transmission
- Aerosol transmission can occur in the hospital through close contact with animals and/or humans. Infectious agents can be aerosolised, such as when cats sneeze or during high-pressure water washing of cages, kennels or soiled materials (*Coxiella burnetti*). Excessive temperature, high humidity and insufficient ventilation are important for aerosol transmission of pathogens

1.3.12.2. Oral transmission

- An animal may lick or chew contaminated materials in the environment.
- Feed and water contaminated with faeces and urine is the most common route of oral transmission of disease agents.
- Examination and treatment of patients with diarrhoea should be carried out in the isolation unit

1.3.12.3. Direct and indirect contact transmission

Transmission by this route requires direct or indirect contact with an infected animal or human

- Indirect contact infections occur through contact with surfaces and materials contaminated with different biological substances (blood, saliva, faeces, etc.)
- It is important to remember that patients in the hospital may be infected with infectious pathogens and it is possible that floors may be contaminated with infectious agents.
- Since not all infected animals show signs of the disease, patients in other departments (such as inpatients and outpatients) should be kept separate because of the possibility of direct contact with these animals

1.3.12.4. Fomite infections

- Fomites are intermediaries in the contact transmission cycle. In reality, any object, even a carer, can be a fomite. For example, all objects such as door handles, keys, telephones, clothes, thermometers, stethoscopes, hoses, brushes, etc. can be contaminated with infectious agents and can be important causes of infectious disease transmission.
- The important aspect of fomite transmission is that these objects are portable and can be contaminated near a patient and then become a source of disease for staff and students in other parts of the hospital.
- The most important means of controlling fomites contamination are proper cleaning and disinfection procedures, preventive medicine measures and separation of equipment from sick animals.

1.3.12.5. Transmission by vectors

- Vector-borne transmission occurs when an insect or arthropod transmits a pathogen from one animal to another animal. Heartworm and *West Nile* viruses are examples of vector-borne diseases
- Fleas, ticks, flies and mosquitoes are important biological vectors that transmit diseases
- The most effective measure against vectors is their elimination or reduction, or the removal of vectors from the host

1.3.12.6. Zoonotic infections

- While the risk of the general population contracting a zoonotic disease is low, veterinarians and other people who come into contact with animals have a high risk of exposure to zoonotic disease agents
- In the event of exposure to a zoonotic disease, whether suspected or confirmed, patient owners, veterinarians, students and contact personnel should be recorded and reported to the Biosecurity Committee
- The chairperson of the Biosecurity Committee and the relevant clinician physician should work together to contact exposed individuals for referrals to official health organisations
- When a suspected or diagnosed infectious disease is encountered, it should be ensured that the authorised clinician reports to the hospital for medical support
- Likewise, when a zoonotic disease is suspected or diagnosed, the responsible clinician should notify the Chief Physician and the Chairman of the Biosecurity Committee.
- The Chief Medical Officer should provide specific information to doctors on zoonotic diseases and occupational exposures
- It should be ensured that all staff and students are in contact with health institutions regarding exposure to zoonotic agents. Since the friends or family members of the staff and students at the faculty are also in the high risk group, necessary information should be provided

1.3.13. Special infectious disease risks

- Immunocompromised staff, patient carers and students are at high risk of exposure to zoonotic diseases. The immune system is affected by various conditions and children under 5 years of age, pregnant women and elderly people are particularly at high risk
- While AIDS suppresses the immune system the most, other diseases such as pregnancy, organ failure, diabetes, alcoholism, liver cirrhosis, malnutrition and autoimmune diseases are conditions that can compromise the immune system
- Radiation therapy, chemotherapy, chronic corticosteroid therapy, immunosuppressive therapies such as organ transplants, implant therapies and long-term dialysis can also suppress the immune system
- All staff, including students, must be informed by authorised persons and hospital management about special health conditions and must be informed before examining an animal with a zoonotic disease

1.4. Risk communication

1.4.1. Risk communication regarding infectious patients

- Given the complexities of patient care and the number of staff at the faculty, effective communication about infectious diseases is essential. Effective communication regarding the actual and potential infection status of patients reduces the likelihood of potential nosocomial or zoonotic diseases. Biosecurity in the faculty requires accurate notifications and education of all personnel (staff, students and other sick animals) dealing with infectious disease and appropriate precautions in disinfected areas/materials
- The infectious disease risks of all patients in the Faculty are assessed by clinicians. Infectious disease risks are the responsibility of senior clinicians, consistent with the common opinion of the Biosecurity Commission
- The Biosecurity Commission must recognise all known or suspected significant infectious disease hazards. These are diseases with zoonotic disease potential, highly infectious diseases, highly pathogenic diseases, bacteria with antibacterial drug resistance, disease agents that are difficult to disinfect by permanent or routine disinfection procedures or suspected diseases. This notification should be made by the veterinarian responsible for the case and at the first opportunity
- All infectious disease risks must be appropriately communicated by the responsible clinician to relevant faculty staff, students and patient owners of the threat of infection in humans and animals that have had specific contact with the patient
- It should be noted that a patient's infectious disease status may change during hospitalisation and risk communication materials should be updated

1.4.2. Small Animal and Large Animal Clinics

The cages or paddocks of sick and infectious disease patients must be clearly marked with infectious disease labels. Information that must be included on these labels;

- Class of the disease according to the risk classification system (Table 2)
- Appropriate disinfection procedures for the control of the risky agent
- Personal protection and hygiene practices needed
- Whether there is any risk of zoonosis
- Name of the known or suspected disease
  Preventive medicine measures must be visible enough to recognise special circumstances
- The special care needs of staff and students responsible for infectious diseases must be ensured so that they do not transmit the disease agent to others around them or to others working with patients. Staff and students responsible for infectious diseases should be included in the Biosecurity Commission's email list

1.4.3. Protocol for advisory staff

If the patient's owner reports acute vomiting, diarrhea, ataxia, abortion, cough or any other suspected infectious disease;

- Counseling staff should only make appointments with the approval of a clinician and if the isolation unit is available
- Complaints should be indicated in the appointment schedule as "acute diarrhea", "acute vomiting", "acute cough", etc.
- "Suspected Communicable Disease" must be written next to the complaints
- Owners should be instructed to keep their animals outside until they have been checked. Following the check, a quick clinical impression should be performed by an intern or clinician to allocate the animal to a specific risk category before entering the hospital or emergency department
- Depending on the risk categories or the situation, animals should either be taken directly to the examination room or taken to the isolation unit. In cat-dog cases, transport should be by wheeled stretcher to reduce hospital contamination
- If a patient with evidence or history of an infectious or possibly infectious disease comes directly to the consultation, consultation staff should immediately contact the appropriate clinic and coordinate the animal for examination/emergency room or isolation to minimize hospital contamination

1.4.4. Student protocol

When a patient with suspected infectious disease arrives, the following will be done.

- The complaints presented will be written in the program as "acute diarrhea", "acute vomiting", "acute cough", etc.
- "Suspected Communicable Disease" will be written next to these complaints
- Owners will be told to keep their animals outside until the disease is confirmed. Animals will then be quickly clinically monitored by interns or clinicians to categorize them into certain risk categories before being taken to hospital or emergency rooms
- Animals can be taken directly into the examination room or isolated, depending on their risk category
- In cat-dog cases, a stretcher should be preferred for transportation to reduce hospital contamination
- All necessary precautions should be taken to reduce direct contact between the patient and other patients in the faculty
- To reduce the risk of infection of students and other animals, only a minimum number of students, as determined by clinicians, should be allowed for follow-up consultation/examination of possible infectious disease cases
- After leaving the examination room, areas and equipment contaminated with feces, secretions or blood should be quickly cleaned and disinfected by the responsible cleaning staff
- Appropriate signs should be posted on doors to prevent rooms from being used until they have been cleaned and disinfected
- When students come into contact with infectious disease cases, they must follow and know the procedures outlined in the biosecurity protocols (through video training, courses and trainings on the faculty website)

1.4.5. Criteria for refusal of admission and/or hospitalization

- When an animal with a notifiable disease is brought in, or where there is a risk of infecting staff or other animals in the hospital, the animal may be refused entry or hospitalization. Specific refusal criteria for each species are listed under the relevant hospital service
- Only senior clinicians can make the decision to reject a patient

1.5. Biosecurity Audit

- A Biosecurity Committee was established at the Faculty of Veterinary Medicine to control the spread of infectious diseases
- Clinical officers should report known or suspected nosocomial (hospital acquired) cases to this committee
- The Biosecurity Committee should act swiftly on zoonotic (animal-to-human) infections that have occurred or are suspected to have occurred as a result of exposure in the faculty
- Monitoring of contagious infected animals and other animals that have been in contact with them is of great importance for biosecurity. All cases brought to the animal hospital must be recorded in a computer-based system

1.5.1. Necessary diagnostic tests for suspected infections

- Tests that identify specific infectious and/or zoonotic agents provide essential information for the appropriate clinical management of infected patients. In addition to directly benefiting the patient, these tests are also useful in protecting the health of animal owners and in the appropriate management of other animals in the herd
- The clinician in charge is responsible for ensuring appropriate communication with the patient owner regarding infectious and/or zoonotic agents, care of sick animals, taking appropriate samples for testing and biosecurity measures
- A full description of the test methods is available on the OIE website

1.5.2. Diseases requiring special attention at the faculty;

- Acute diarrhea of cats and dogs (Salmonella, Campylobacter, *Parvovirus*, *Cryptosporidium,* Giardia), distemper, *Chlamydia psittaci* infection
- Equine *Herpesvirus type 1* neural form
- Bird flu
- Toxoplasmosis, echinococcosis, leptospirosis, rabies, Crimean Congo hemorrhagic fever, brucellosis, anthrax and salmonellosis in large animals

1.5.2. Environmental Salmonella monitoring in clinics

1.5.2.1. Sampling and analysis of paddocks and cages

- Paddocks and cages housing animals diagnosed with Salmonella infection should be tested following routine cleaning and disinfection, with a sample taken for culture testing before reintroduction to a sick animal

- When paddocks and cages are emptied for sampling, this should be reported to the Biosecurity Committee by the veterinarians or technical staff concerned

These results should be reported regularly by the Biosecurity Commission.

1.5.2.2. Routine environmental audit

- Electrostatic dust collection wipes are used for routine environmental inspection on all smooth areas of the hospital and hand contact surfaces
- Sampling should be scheduled every 6 months for most areas and more frequently (every 3 months) in areas that may be contaminated with Salmonella
- Faculty staff responsible for positive fields must report each positive culture result to the Biosecurity Commission

1.5.3. Management of patients infected with resistant bacteria

- Patients infected with bacteria resistant to antimicrobial drugs or multidrug groups pose a potential health hazard to faculty staff, students, patient owners and other patients. In such cases, the faculty implements high biosecurity measures to prevent spread

1.5.4. Antimicrobial resistance and antimicrobial drug use

- Any decisive program for the control of infections must take into account that the drugs that ensure quality medical care will have significant antimicrobial resistance effects. The faculty animal hospital should provide the necessary training on the responsible use of antibacterial drugs

1.5.5. Notifiable animal diseases

- Clinical officers or laboratory supervisors should inform both the Biosecurity Committee and the Provincial Directorate of Food, Agriculture and Forestry about animal diseases and zoonotic diseases requiring mandatory notification (Tables 4 and 5)

Table 4 shows the notifiable diseases published in the Official Gazette dated 22.01.2011 and numbered 27823 and renewed when necessary.

Table 4. List of Notifiable Diseases

A. Diseases of land animals	B. Diseases of aquatic animals
1. Alum	1. Epizootic hematopoietic necrosis
2. Bovine brucellosis	2. Epizootic ulcerative syndrome
3. Bovine tuberculosis	3. Viral hemorrhagic septicemia
4. Rabies	4. White spot disease
5. Mavidil	5. Yellowhead disease
6. Cattle plague	6. Taura syndrome
7. Spongiform brain disease of cattle	7. Infectious hematopoietic necrosis of fish
8. Sheep and goat brucellosis	8. Infectious salmon anemia
9. Sheep and goat plague	9. Perkinsus marinus infection
10. Sheep goat flower	10. Microcytos mackini infection
11. Anthrax	11. Marteilia refringens infection
12. Scrapie	12. Bonamia ostreae infection
13. Chicken plague	13. Bonamia exitiosa infection
14. Pseudo chicken plague	14. Koi herpes virus disease
15. Pullorum	15. Spring viremia of carp
16. Poultry typhoid	16. Crayfish plague
17. Ruam	17. Bacterial kidney disease
18. Durin	
19. Infectious anemia of horses	
20. Equine encephalomyelitis	
21. African horse plague	
22. African swine fever	
23. Classic swine fever	
24. Vesicular disease of pigs	
25. Small hive borer	
26. American foulbrood rot of bees	
27. Tropilaelaps mite	
28. Spongiform brain disease of cats	
29. Nodular exanthema of cattle	
30. Infectious stomatitis	
31. Rift Valley fever	
32. Infectious bovine pleuropneumonia	
33. Enzootic bovine leukosis	
34. Epizootic hemorrhagic disease of deer	

Table 5. List of Zoonotic Diseases

Viral Zoonoses	Bacterial Zoonoses	Parasitic Zoonoses	Mycotic Zoonoses
1. Rabies 2. Bird Flu 3. Rift Valley Fever 4. Crimean-Congo Hemorrhagic Fever 5. West Nile Fever vs.	1. Anthrax 2. Brucellosis 3. Tuberculosis 4. Ruam 5. Borreliosis 6. Campylobacteriosis 7. Leptospirosis 8. Listeriosis 9. Psittacosis 10. Salmonellosis 11. Vibriosis 12. Tularemia 13. Q fever 14. Verotoxin producing 15. *E.coli* O157:H7 Infection vs.	1. Anisakiasis 2. Cryptosporidiosis 3. Cysticercosis 4. Echinococcosis 5. Toxoplasmosis 6. Trypanosomiasis 7. Trichinellosis vs.	1. Microsporosis 2. Trichophytosis 3. Histoplasmosis 4. Blastomycosis vs.

1.6. Education and research animals

- Staff and students using teaching and research animals at the faculty must comply with biosecurity measures
- Education and research animals should not be kept in the sick animal housing areas of the faculty, except in extra cases and for medical reasons

CHAPTER 2: BIOSECURITY RULES FOR LARGE ANIMAL CLINICS

2.1. Admission and examination of sick animals

- The animal owner should be asked to register first. After registration, a preliminary examination of the animal should be performed by the intern or clinician by taking a quick anamnesis in the triage department. According to the risk of infectious disease, the animal should be taken to the examination room and/or isolation unit.
- During the application, the patient's complaint should be clearly written on the patient registration form as "acute diarrhea", "acute vomiting" or "acute cough" and the "Suspected Infectious Disease" section should be marked
- Every precaution should be taken to reduce or prevent direct contact between patients with suspected infectious diseases and other patients in the hospital. Such patients should be transported to the appropriate examination/treatment/accommodation area by the shortest possible route
- A suitable paddock should be identified by the clinician and stable staff for patients whose hospitalization is decided after the examination

2.2. General rules for the large animal inspection hall

- All personnel are required to wear clean and appropriate clothes for their work
- Students, interns, clinicians, technical and cleaning staff must wear appropriate clothing with name tags attached, if they do not have appropriate clothing, they must be removed from the clinic
- All staff must wear durable boots or shoes Shoes must be easy to clean and disinfect
- At the entrance to the examination room, foot baths / mats with disinfectant must be entered by stepping on them.
- Clean examination gloves should be worn when handling patients at risk of infectious diseases or before handling secretions, discharge and wounds
- Hands should be washed properly and disinfected with alcohol-based hand sanitizer before and after examining each patient
- Surfaces and equipment contaminated with feces, urine, blood and other secretions must be cleaned and disinfected immediately by the personnel in charge.
- Hand washing is mandatory after wound treatment, bandage change, ophthalmologic care, catheter insertion, endoscope application and contact with high-risk patients. Hands should also be washed in other situations where hands are contaminated
- After the examination, the instruments and equipment used in the patient examination (stethoscope, thermometer, probes, endoscopes, etc.) must be cleaned and disinfected before they are used in another patient.
- Waste (domestic, medical, sharps, etc.) must be disposed of in appropriate waste bins during the examination
- Students and staff are prohibited from consuming any kind of food and beverages in the examination rooms

- Desks, counters, sinks, floors, meeting rooms in clinics should always be kept tidy and clean

2.3. Large animal hospitalization unit, cleaning and maintenance of the unit

- Records of the admitted patient (clinical findings, treatment procedures, etc.) should be recorded on the patient information sheets posted in front of the paddocks. These records should be consultable by students, interns and clinicians. Any change in the patient's condition during hospitalization should be recorded on the information sheets
- Medicines or other supplies used in the treatment of patients should be kept in the pharmacy or in a locked cabinet (ophthalmologic supplies, creams/pomades, alcohol and syringes). Patient information sheets on the wall of the paddock should indicate treatment directives
- The ration given to the inpatient and the frequency of eating must be clearly written on the paddock card
- Animal caretakers are responsible for cleaning the litter in the paddocks and feeding the patients. Full paddocks should be cleaned and made suitable by laying new litter.
- Animals without suspicion of infectious infection (patients without fever and respiratory problems, colicky and ophthalmological patients, trauma and injuries, newborns without infectious diseases) are normally hospitalized
- In the presence of newborn animals, patient hygiene is much more important and accumulated feces and litter should be removed from the area as soon as possible
- Feeders and drinkers in the paddocks should be checked regularly and cleaned before a new patient is admitted. It should be reported to the responsible clinician whether the hospitalized patient has consumed the feed or water and if the patient is not eating the feed, the feed should be removed from the feeder.
- Cleaning materials used for patients in the non-risk group should be disinfected once a week, while cleaning materials used for patients at known risk of infectious diseases should be cleaned and disinfected after use
- The floors of the feed rooms in the hospitalization unit should be cleaned and disinfected before new feed sources are brought in. All cereals or other feed sources must be stored in containers with tight lids
- Sinks in corridors, general treatment areas, examination rooms and paddocks must be properly cleaned and disinfected by responsible personnel
- Areas not used daily (wall tops, windowsills, etc.) should be washed monthly to prevent dust accumulation

2.4. Isolation unit

- Special precautions are required when managing patients with infectious diseases or suspected infectious diseases

- Animals with suspected infectious diseases should be examined in a transport truck or trailer used as an ambulance. The examining clinician is responsible for deciding whether the patient should be hospitalized and/or admitted for treatment
- Due to the potential for nosocomial transmission, patients with acute infections (diarrhea, vomiting, cough, aborted animals, etc.) and patients with fungal infections should be isolated
- When clinicians, interns or students perform the initial examination of these patients to ~~assess the~~ risk of infectious disease, they should take personal protective measures until they are satisfied that there is no risk of infectious disease
- The Biosecurity Commission must be informed immediately when patients are identified as being at high risk of infectious diseases or when these problems develop during hospitalization. Only the Biosecurity Commission or the Chief Hospital Physician is authorized to authorize the isolation of patients known or suspected to be at high risk of infectious diseases
- Entry to these units should be avoided unless necessary. Responsible clinicians may allow students to enter the isolation unit for educational purposes, but this should be as little as possible and all entering staff should take appropriate protective measures
- Disinfectant foot baths/mats should be used at the entrance to the isolation area and disposable aprons and gloves should be worn. Thermometers, stethoscopes and other instruments and materials used must be cleaned and disinfected by wiping with alcohol.
- All waste materials (gloves, feces, etc.) generated in this area during the examination of patients staying in the isolation unit should be considered as medical waste.
- Before the patient is removed from isolation, the animal's nails should be brushed with 0.5% chlorhexidine solution. All personnel in contact with the patient must wear appropriate clothing and take personal protective measures. Surfaces contacted during animal transportation and areas contaminated with feces or body fluids should be cleaned and disinfected.
- Diagnosis and treatment procedures that need to be performed in the main hospital building for isolation patients should be planned for the end of the day. All instruments and equipment used for examination must be cleaned and disinfected after the procedure according to the relevant procedure

2.5. Anesthesia area and surgical unit

2.5.1. Anesthesia field

- The anesthesia preparation area and the operating room should be designed to facilitate access for students, staff and clinicians
- Barrier protective measures should be taken in this area and fecal material should be urgently removed from the anesthesia preparation area or other areas of the surgical unit

- Apparatus on animals (halter, chain, etc.) should be removed as much as possible before entering this area and attention should be paid to asepsis and antisepsis in applications

2.5.2. Surgical unit

- A high standard of cleanliness and hygiene must be maintained in the surgical unit
- All personnel must wear appropriate clothing and footwear in this area
- The surgical team and the operating room should be prepared aseptically and these conditions should be maintained throughout the operation
- Instruments and equipment used during the surgical procedure (anesthesia devices, endotracheal tubes, shackles, etc.) should be cleaned and disinfected at the end of the procedure. Blood and other dirt on the floor must first be washed and then wiped with disinfectants
- Cutting, piercing and stabbing materials (scalpels, syringe tips and cannulas) used during the surgical procedure should be collected in special yellow boxes, feces or secretions should be cleaned as soon as possible by the personnel responsible for the patient.

2.5.3. Postoperative care paddock

- The precautions to be taken in the recovery paddock should be the same as the protective measures for normal paddocks

2.5.4. Management of surgical patients with infectious diseases

- The competent clinician has the responsibility to identify and inform cases of known or suspected infectious disease
- Procedures for these cases should be planned towards the end of the day or, where possible, in the isolation unit
- The clinicians responsible for these cases are responsible for reporting that the anesthesia area and recovery paddocks are contaminated with potentially infectious pathogens. These areas should be disinfected before use by other patients

2.6. Discharging patients

- Animals recovered as a result of the treatment procedures applied should be discharged and the date of discharge should be written in the patient record section.
- When the patient is discharged, the patient card in the paddock where the patient stayed must be cleaned and all records must be collected in the patient registration unit.
- Before discharge, owners should be warned about the dangers of infectious diseases and how to control these dangers
- After the patient is discharged, a "clean" notice should be posted on the paddock door or side wall. The paddock should be cleaned and disinfected as soon as possible

- No animals should be allowed to enter this paddock prior to cleaning and disinfection
- All materials used on the patient (halter, rope, blanket, etc.) should be cleaned and disinfected with chlorhexidine solution (0.5%)
- All medical supplies to be disinfected should be placed at the entrance of the units, then the relevant staff should collect these supplies for cleaning and disinfection and subsequent storage

2.7. Dying animals

- Animals that die during hospitalization should be reported to the relevant person by the barn staff
- When the patient dies, the paddock card should be cleared and all records collected in the patient record unit
- Paddocks used for deceased animals should be cleaned before a new animal enters the paddock. However, paddocks used for patients with known or suspected infectious agents should be marked with a "to be disinfected" sign. No other animals should be allowed to enter these paddocks before cleaning and disinfection.
- When the animal dies or is euthanized, the cadaver should be removed from the paddock as soon as possible and taken to the necropsy department in a protected transport vehicle
- Vehicles (forklifts, etc.) must be thoroughly cleaned and disinfected after transporting a cadaver
- If euthanasia is to be performed, it must be done in the autopsy room

2.8. Visiting animal owners

- Whatever the reason, animal owners are prohibited from staying overnight in the hospital with their patients. However, they may visit their patients within the specified hours after obtaining permission from the hospital administration and being accompanied by an attendant
- Owners must comply with all barrier protection measures necessary to touch their animals or enter paddocks
- Visits to patients in the isolation unit are prohibited. In exceptional cases, such as euthanasia, this may be permitted, provided that biosecurity measures are in place
- Dogs and other pets must not be allowed in the hospitalization areas

2.9. Cleaning and inspection protocols

Monthly routines;

- Areas that are not used frequently (tops of walls, scales, etc.) should be washed with pressurized water against dusting
- Tools used in cleaning and disinfection must be maintained

6-month routines;

- All surfaces in the hospitalization area, whether frequently used or not, should be cleaned and disinfected with quaternary ammonium compounds
- Calf boxing should be cleaned and disinfected from head to toe with a brush and detergent
- Sewage drains in isolation units must be cleaned and disinfected

Annual routines;

- The entire hospital should be cleaned and disinfected once a year from top to bottom, including all equipment

General cleanliness;

- Tractor or forklift wheels should be scrubbed with quaternary ammonium compounds before entering and leaving the hospital
- When a forklift is used to transport deceased animals to autopsy, the forklift must be thoroughly cleaned and disinfected before returning to the hospital
- Pest control must be ensured in feed storage rooms

Routine environmental contamination monitoring;

- The floor, hand contact surfaces should be analyzed for the presence of Salmonella every 6 months and isolation units more frequently
- Positive results should be reported to the hospital Biosecurity working group

CHAPTER 3: BIOSECURITY RULES FOR SMALL ANIMAL CLINIC

All clinicians, students and hospital staff are required to follow basic hygiene rules and to protect themselves personally. All staff working in the Small Animal Clinic are responsible for maintaining cleanliness.

3.1. General outfit

- All staff and students should wear hospital-specific clothing to reduce the risk of carrying infectious diseases
- All staff and students must have clean clothes and wear clean and appropriate footwear. Shoes must be closed, easy to clean and disinfect
- Protective clothing (gowns, etc.) and footwear should be replaced or cleaned when contaminated with feces, urine, blood, nasal exudate and other body fluids

3.2. Patient hygiene

Cage hygiene is very important for the patient staying at the Small Animal Clinic. Stool, blood, urine, all organic material and dirt must be removed before a new animal enters a cage. The staff responsible for cleaning should clean the cages and corridors every day. When dirt is seen in the cage, a "Clean" warning should be posted in the cage. Since hygiene is very important for newborns, the cage should be cleaned and disinfected when stool or wetness-moisture is detected in the litter.

- If the animal is discharged, the cage should be cleaned as soon as possible.
- An animal with an infectious disease or suspected infectious disease should have a "Disinfect" sign posted in the cage. Cleaning staff should empty, clean and disinfect the cage as soon as possible. Until the cage is disinfected, it should be considered an infectious area and no animals should enter before the cleaning-disinfection process
- Cages used by animals that do not carry infectious diseases should be emptied, cleaned and disinfected regularly
- During the animal's hospitalization, feed and water bowls should be cleaned regularly (as needed or at least twice a day) and cleaned and disinfected between use by different animals. The water in the water bowl should be checked regularly and the bowl should be filled with fresh water at least twice a day after cleaning. The animal's appetite should be noted in units on the patient card. Food should be placed in containers suitable for animals
- Animals should be kept as clean as possible and all discharges and secretions should be removed. Dirty animals should be washed and all animals should be regularly screened
- The area around the cage should be clean and tidy. There should be no medication material, cage litter and student-worker clothes etc. around the cage
- If the animal defecates outside the cage, the stool should be removed immediately. If the animal urinates inside the building or on a hard floor, the urine should be removed immediately and the floor should be cleaned, disinfected and dried.

3.3. Food and beverage consumption

People should not consume food and drink in the Small Animal Clinic. Storage of food and liquids must not be allowed.

3.4. General cleaning and hygiene

3.4.1. Proper cleaning

All staff and students are responsible for their personal hygiene and the cleanliness of the Small Animal Clinic.

- Hands should be cleaned or washed with an alcohol-based hand sanitizer before and after contact with each patient. Hands should also be cleaned or washed in the same way when leaving the Small Animal Clinic
- Clean examination gloves should be worn when handling high-risk patients, such as those at risk of infectious disease or immunocompromised animals. Clean examination gloves should also be worn when coming into contact with discharge, secretions or wounds
- Surfaces or equipment contaminated with stool, secretions and blood should be cleaned and disinfected

3.4.2. General disinfection protocol

- All equipment (mouthpiece, speculum, forceps, etc.) should be cleaned and disinfected between patients using 70% isopropyl alcohol or 0.5% chlorhexidine
- Students' equipment such as stethoscopes should be cleaned and disinfected regularly
- All organic material must be removed before disinfection
- Soiled cages, walls, doors, water and feed containers should be scrubbed or mechanically cleaned with water and detergent or soap. The cleaned area should be rinsed to remove detergent residues. The rinsed area should be allowed to drain or, if possible, dry
- The surfaces of soiled cages, walls, doors, water and feed containers should ideally be in contact with the disinfectant for 15 minutes. Excess disinfectant should be removed with water. The disinfectant should then be rinsed from all surfaces
- After disinfection, the cleaner must remove protective clothing and wash hands
- All multipurpose areas such as examination rooms should be organized, cleaned and disinfected between patients

3.4.3. Mats and foot baths

- Mats are located at the entrance to the animal isolation area and must be changed every morning
- Foot bath solutions should be changed every morning
- If the foot bath solution dries or decreases, it should be prepared again immediately
- Staff and students should use mats and footbaths wherever they encounter them

3.4.4. Equipment disinfection protocol

- All equipment or other objects including gastric catheters, mouthpieces, endoscopes, etc. must be cleaned and disinfected when used between different patients
- Sterilized equipment such as surgical equipment should be cleaned with soap and water after use and disinfected with 0.5% chlorhexidine solution. The equipment should then be sterilized
- Surfaces contaminated with stool, secretions or blood should be cleaned and disinfected immediately
- Animal cages with infectious diseases: All equipment used on such a patient should be specific to that patient and stored in a box for each patient. The material should be cleaned with 0.5% chlorhexidine solution after each application. The collars used on these patients should only be used on these patients and should not be used on other patients. These collars should be disinfected at regular intervals by immersion in 0.5% chlorhexidine solution. These cages should be checked, cleaned and disinfected once more before being used for a new patient
- Stethoscopes Stethoscopes owned by staff in the non-communicable diseases department should be disinfected regularly with alcohol or hand sanitizing solution. Stethoscopes that are visibly soiled or come into contact with a patient with an infectious disease or suspected infectious disease must be disinfected immediately
- Thermometers Electronic thermometers should be thoroughly disinfected daily with alcohol and/or chlorhexidine wipes. Plastic thermometer cases should be regularly dipped in a disinfectant solution. Animals with infectious diseases or suspected infectious diseases should have their own individual thermometers. These should be disinfected after they become visibly soiled, after each examination and after the patient has been discharged.
- Other staff-owned equipment, such as scissors, may be used on multiple patients, but should be cleaned and disinfected with 70% isopropyl alcohol or 0.5% chlorhexidine solution when used between patients

3.4.5. Corridors

Corridors should be cleaned regularly every day.

3.5. Rules for the management of animals coming to the small animal clinic

3.5.1. Outpatients

- Patients without signs of infectious diseases should be in the waiting room with their owners
- Patients with acute vomiting, cough, runny nose or diarrhea should not be admitted to the clinic without being checked by a student or veterinarian
- Patient transport should be via stretcher or a cage
- The patient should be transported to the examination room by the shortest route. The examination room where such a patient is placed should be closed, no one except those responsible should enter and a "**Do Not Use**" sign should be posted on the door.

- The room should be cleaned and disinfected after the patient's procedure is finished

3.5.2. Inpatients

- Inpatient cages are determined by the veterinarian in charge. The allocated cage must be clean
- Accessories belonging to the patient such as blankets, beds, collars are returned to the patient owner. If the patient owner insists on keeping these accessories, he/she should be informed that they will not be returned.
- An information note about the patient and the owner is written on the cage where the patient is placed.
- Suspected or confirmed infection should be written on the information card
- If the patient has a special condition such as biting, Leptospirosis, etc., an information note should be hung in the cage
- No food such as raw meat or bones and the animal must be given clean water until told otherwise
- Moving patients from cage to cage is prohibited. The cage must be cleaned when the patient is moved from the cage
- When the patient is discharged, a "**Clean**" notice should be posted on the cage
- There should be a file containing the patient's condition and the information of the patient's owner at the hospitalization entrance desk.
- On the whiteboard in the hospitalization section, the name of the student responsible for the patient, the estimated discharge time, and what needs to be done in the treatment should be written.
- Food should be stored in suitable bags, cans or plastic containers
- Foods that are likely to spoil should be refrigerated
- All staff and students are responsible for cleanliness during hospitalization
- Full cages must be cleaned at least 2 times a day by cleaning staff
- Again, all staff are responsible for warning about dirty cages, cleaning and preparing them again.

3.5.2.1. Discharge

- Before discharge, owners should be warned about the dangers of infectious diseases and how to control these dangers
- Estimated time of discharge should be written on the whiteboard at the hospitalization
- When the patient is discharged, a "**Clean**" notice should be hung on the cage. The cage should also be cleaned as soon as possible
- Before patients are discharged, their owners should be informed about infectious diseases and controls
- The cages of discharged patients should be marked "**Clean**" and disinfected as soon as possible

3.6. Small Animal Clinic Cleaning Protocol

- The parking area and its surroundings should be regularly checked weekly and all debris should be removed
- Routine cage cleaning: Soiled cages, walls, doors, water and feed containers should be scrubbed with water and detergent or soap, or mechanically cleaned
- The cleaned area should be rinsed to remove detergent residues
- The rinsed area should be allowed to drain or dry if possible
- The surfaces of soiled cages, walls, doors, water and feed containers should ideally be in contact with the disinfectant for 15 minutes
- Excess disinfectant should be removed with water
- The disinfectant must then be rinsed from all surfaces
- After disinfection, the cleaner must remove protective clothing and wash hands

Daily routines;

- Basically, dirty cages should be cleaned immediately. All dirty places seen in the clinic should be cleaned immediately

Weekly routines;

- All examination rooms and the hospitalization area must be cleaned and disinfected

Monthly routines;

- All unused cages should be cleaned within one month
- Less used or unused areas (such as ceilings) should be cleaned within one month
- The isolation unit must be emptied, cleaned and disinfected

Annual routines

- The entire Small Animal Clinic must be cleaned and disinfected

3.7. Management of patients with suspected infectious diseases

- Animals with suspected infectious diseases should be treated as outpatients or without hospitalization as much as possible
- Patients with acute vomiting, cough, runny nose or diarrhea should not be admitted to the clinic without being checked by a student or veterinarian
- Patients at risk of infectious diseases should not be taken directly into the examination room. Patient transportation should be by stretcher or cage
- If such a patient is brought directly to the consultation desk, the person in charge of the consultation desk should immediately contact the veterinarian in charge and take the patient to the examination room immediately
- The patient should be transported to the appropriate examination room by the shortest route. The examination room where such a patient is placed should be closed, no one except those in charge should enter and a "**Do Not Use**" sign should be posted on the door. The room must be cleaned and disinfected after the patient's procedure is completed. The room should not be opened for use before the disinfection process is completed.

- "acute diarrhea", "acute vomiting", "acute cough" or "possibility of infectious disease" should be written in the patient's file
- Areas where treatment and diagnosis of suspected infectious disease animals, hospital equipment, staff and student clothing should be cleaned and disinfected immediately after contact with the animal, regardless of contamination.
- It is forbidden for owners of animals with infectious diseases to visit their patients, except in cases such as euthanasia. The visiting hours of other patients should be determined by the hospital administration and should be carried out within the framework of general hygiene rules

3.7.1. Hospitalization of animals with suspected infectious diseases

3.7.1.1 Movement of high-risk patients

- Those requiring isolation from animals suspected of infectious diseases should be sent directly to the isolation unit
- Care should be taken to minimize contamination during this transport
- The handler must wear the necessary protective clothing
- Any areas contaminated with infectious material during transportation should be cleaned and disinfected immediately
- Transportation should be by cage or stretcher

3.7.1.2. Diagnostic tests required in patients with infectious diseases

- The clinician is responsible for obtaining appropriate samples from the patient
- All protective measures (gloves, protective clothing, masks, etc.) must be taken during contact with animals with suspected infectious diseases
- Samples for diagnostic tests should be taken in the isolation unit
- Samples from these patients should be placed in ziplock bags and the person handling them should take the necessary personal protective measures. Specimens should be labeled as suspected infectious disease

3.7.1.3. Isolation

- All patients with confirmed contagious infectious disease should be kept in a small animal isolation unit. Access to and from this unit should be restricted
- Staff working in the isolation unit should be informed about the patient
- Hands must be washed and disinfected before and after examining each patient in this department
- Clean examination gloves must be worn in the isolation unit. All personnel are responsible for environmental hygiene. The environment must not be contaminated with dirty hands or equipment
- Patients in the isolation unit should not be moved around in the common area
- Students who come into contact with an animal carrying an infectious disease should not come into contact with other animals
- Responsible clinicians, students and staff must enter the isolation unit for patient care, cleaning and treatment. Those working in this unit must take appropriate barrier precautions (gloves, masks, boots, disposable gowns, etc.)

- Necessary warnings should be written on the cages
- In general, any material from the isolation unit should not be taken back to the main clinical building
- Contaminated surfaces, equipment must be cleaned in accordance with the rule
- Equipment used on a patient should only be used on that patient
- Clinical gown should be removed outside the isolation unit
- All necessary equipment should be available to the clinician to minimize entry and exit to and from the isolation unit
- Use a foot mat or bath
- Hands should be washed and disinfected with hand sanitizer
- Barrier clothing (overshoes, disposable apron, mask, gloves, gloves, bonnet) should be worn
- Double gloves must be used during inspection in the isolation unit
- Procedures that may contaminate the environment (such as rectal touch, rectal temperature measurement, abscess manipulations) should be performed last
- Care should be taken not to spread organic material (urine, stool, etc.) in the room
- Cutting or piercing material must be handled appropriately and disposed of in yellow bins after the end of the procedure
- Contaminated surfaces should be cleaned and disinfected after patient care is finished
- After the procedure, the thermometer, stethoscope and other materials should be disinfected with alcohol
- When leaving the unit, barrier clothing should be removed and disposed of in the medical waste bag. Hands must be washed or disinfected
- Door handles in the isolation unit must be disinfected daily
- Patient transfer from the isolation unit to the clinic is subject to the permission of the head of the Biosecurity Commission or the Chief Physician of the Hospital
- If these patients are to be intervened in the Small Animal Clinic (ultrasound, X-ray examination, surgical operation, etc.), their intervention should be left to the end of the day if possible. Patients should be transported in the least contaminated way. All surfaces that these animals come into contact with should be cleaned and disinfected
- Ultrasound should be cleaned and disinfected after performing ultrasonographic examinations on patients
- If ECG is performed on patients, the ECG should be cleaned and disinfected with 0.5% chlorhexidine or alcohol
- All material used in the surgical intervention of animals in the isolation unit must be cleaned, disinfected and then sterilized. This material must be transported in sealed plastic bags
- If patients who will undergo surgical operation or anesthesia have or are suspected of having infectious diseases, this should be written on their forms.
- The anesthesia device must be cleaned and disinfected after each use

- Tissue residues on the oxygen application apparatus should be cleaned with soap and water and rinsed. It should then be kept in chlorhexidine solution for 15 minutes and then rinsed.

3.7.1.4. Anesthesia and surgical procedures of patients in the isolation unit

- Staff or students who will come into contact with patients in the isolation unit must wear appropriate clothing
- Surgical procedures on animals with infectious diseases should be postponed until the end of the day if possible
- All surfaces must be cleaned and then disinfected after surgical procedures for patients in the isolation unit
- All surgical equipment must be cleaned and disinfected. All surgical equipment used on patients should be placed in a sealed plastic bag. Information about the infectious disease or suspected infection must be written on this bag

3.7.1.5. Small animal surgery and anesthesia procedures

- Clean surgical gowns, bonnets, overshoes and masks must be worn before entering operating rooms
- High standards of hygiene and cleanliness must be maintained in operating rooms
- The area to be operated on should be prepared aseptically. Asepsis must be maintained throughout the operation
- Unnecessary entries and exits should be prohibited
- Preparation for surgery of infectiously diseased or suspected infectiously diseased animals should be performed in the animal's cage or in the appropriate examination room for infectious disease patients. Material residues used here must be disposed of immediately in the appropriate waste bin and all surfaces must be cleaned, disinfected and dried
- All hands should be washed before contact between patients
- Stool contaminated areas should be cleaned immediately after stool removal
- The patient should be premedicated in a cage or isolation unit
- It should be brought to the anesthesia preparation department immediately before anesthesia is administered.
- A cage or stretcher should be used during transportation
- All contaminated equipment must be cleaned, disinfected and then sent for sterilization
- The status of animals with infectious diseases or suspected infectious diseases should be written on the anesthesia form
- It is forbidden to shave the surgical area one day before the operation to prevent bacterial colonization
- Unless otherwise decided, surgical patients should be brought to the anesthesia administration area one hour before the operation. Intravenous catheter must be inserted aseptically

- After the operation, contaminated clothing should be placed in a plastic bag and sent to the cleaning unit
- After the operation, patients without suspected infectious diseases can be awakened in the anesthesia preparation or waking department. Those with infectious diseases are awakened in their cages
- Stretchers should be cleaned, disinfected (15 minutes contact time) and then rinsed with clean water
- Tissue residues on the oxygen application apparatus should be cleaned with soap and water and then rinsed. It should then be soaked in chlorhexidine solution for 15 minutes and then rinsed
- The anesthesia machine must be cleaned and disinfected between cases
- Operating rooms must be cleaned and disinfected. All contaminated equipment must be cleaned, disinfected and placed in plastic bags and sent to the cleaning unit

3.7.1.6. Surgical procedures for patients with infectious diseases

- Surgical procedures on animals with infectious diseases should be avoided whenever possible. If surgery is necessary, it should be performed at the end of the day if possible.
- Operating rooms should have as few people as possible and measures should be taken to reduce contamination
- After the operation, contaminated clothing should be placed in a plastic bag with a warning that it is infected. They should be sent to the cleaning unit

3.7.1.7. Additional specific situations

- Testing for Canine *Distemper* virus, *Canine Influenza* virus, Giardia, Leptospirosis, *Parvovirus* should be encouraged
- Patients with feline leukemia and panleukopenia should be hospitalized with cage space from other patients if possible. Staff or students who touch this patient should not touch other cats
- This should be written on the cages of patients with suspected Canine *Parvovirus*.
- Suspect status should be changed to canine *Parvovirus* when the disease is confirmed
- Staff and students who come into contact with these patients should avoid contact with at-risk dogs under 1.5 years of age

CHAPTER 4: BIOSECURITY PROCEDURES FOR PRACTICAL TRAININGS IN ABATTOIRS AND SLAUGHTERHOUSES

4.1. Objective

- The risk of transmitting animal or human diseases to livestock, poultry or foodstuffs from the various facilities and sources where faculty staff and students conduct practical courses
- To minimize the risk of infection of faculty staff and students from food and animals
- The facilities where practical courses are held include farm, dairy farm, university dining hall, slaughterhouse, poultry slaughterhouse and meat products processing units.

These rules apply to students of the Faculty of Veterinary Medicine.

4.2. Students' dress and grooming

- Students are obliged to provide clean white coats, boots and hard hats and to have a bag and/or pouch of sufficient size to carry these materials
- Boots and aprons will not be worn from the faculty to the slaughterhouse. To be worn in the slaughterhouse
- Hair bonnet and gloves will be given by the instructor at the slaughterhouse
- When entering the slaughterhouse, each student must be wearing an apron, hair cap, hard hat, gloves and boots. Students who do not follow these rules will not be admitted to the practice and will be considered absent. Dirty aprons and dirty boots will not be accepted

4.3. General hygiene rules

- A hygiene barrier must be used when entering the slaughterhouse from the antemortem examination area
- All inspection (inspection, palpation, incision, sampling) must be performed in such a way as to avoid cross-contamination of tissues suitable for human consumption
- Students are required to comply with personnel hygiene rules
- When entering and exiting the workplace and restroom and when hands are dirty, they should first be washed with soapy water and then disinfected with antibacterial wet wipes or alcohol-based hand sanitizers.
- Hands should be dried with a paper towel, the used paper towel should be thrown into the trash can

4.4. Rules to be followed in the slaughterhouse

During the time in the slaughterhouse:

- Smoking is prohibited
- Used bonnets and gloves should be thrown in the garbage bin
- Business employees should not interfere in their work
- Training will be given for meat inspection in the areas allocated to students and students will not walk around the slaughterhouse without the knowledge of the instructors.
- No unauthorized image/video will be taken

4.5. Protection against zoonotic diseases

- Instructors and students must inform the course instructor if they have infectious diseases known to be risky in terms of food safety. In this case, that student will not be allowed to enter the slaughterhouse.
- Students should be familiar with all potential zoonotic infections that may be present in the slaughterhouse
- Whenever possible, the slaughterhouse management should inform the instructor about the carcasses in which zoonotic diseases have been detected. Students should be prevented from direct contact with these carcasses and infected materials such as organs, tissues, secretions and excretions of the carcass.

4.6. Practices in cattle, sheep and goat slaughterhouse

- Upon entering the slaughterhouse, students are required to wear protective equipment as described above
- Application in both slaughter lines (cattle and sheep-goat)
- Clean and dirty sections are identified for both lines
- Students will first visit the clean section and then the dirty section in both cutting lines
- Slaughterhouse practices will end in paddocks and ante-mortem examination area
- Students perform postmortem carcass and organ examination in the slaughterhouse
- If students are injured due to cuts during the practice, the examination is immediately stopped and the injured student is immediately taken out of the cutting room. The student washes his/her hands in the sink and the cut wound is dressed with appropriate antiseptics. In case of severe injuries or fainting, the student is immediately taken out of the slaughterhouse, an ambulance is called and the student is immediately transferred to the hospital accompanied by an instructor.
- Antemortem and postmortem examinations must be performed under the supervision of the instructor(s). Students must not have direct or indirect contact with the tissues and organs to be destroyed and must be warned about this.

4.6.1. Visit to the meat processing unit

- Students should move from the clean section of the slaughterhouse to the meat cutting unit

4.6.2. Visit to the meat processing unit

- The rules described above also apply in this slaughterhouse

4.7. Poultry slaughterhouse

- The rules described above also apply in this slaughterhouse

4.8. Cleaning and Disinfection of Equipment

- Boots, helmets, knives, steel gloves and aprons used in the slaughterhouse should not be used in other places such as laboratories, clinics, farms without cleaning and disinfection.
- At each entrance and exit of the slaughterhouse, the boots should first be cleaned with a shoe cleaning brush and then the boots should be disinfected by dipping them into the disinfectant solution and using a brush.
- Hard hats should be disinfected with alcohol. If it is dirty, it should first be washed with detergent hot water and then disinfected with alcohol.
- Knives should be cleaned with detergent hot water in the sink in the slaughterhouse and brought to the faculty and disinfected with at least 82ºC hot water.
- The department's meat examination application bag should contain a glove box, cap, 3 knives, disinfectant solution (70% alcohol).

4.9. Return to Faculty

- After leaving the slaughterhouse, students should take off their boots and aprons and board the faculty return vehicle in their daily clothes and shoes.
- Instructors should record the cases seen and the practices performed that day on the slaughterhouse practice form

CHAPTER 5: BIOSECURITY RULES FOR FIRAT UNIVERSITY AGRICULTURE AND ANIMAL HUSBANDRY RESEARCH AND APPLICATION CENTER

There are 5 different units in the center, which operates under the Rectorate of Fırat University.

I. Cattle unit
II. Sheep farming unit
III. Poultry unit
IV. Equine unit
V. Pig Unit
VI. Crop production

There is sufficient distance between these units to avoid biosecurity problems. In addition, employees were employed separately for all units as required by biosecurity measures.

5.1. Cattle breeding unit

- **Herd Health Control Program** designed by the faculty members of Fırat University Faculty of Veterinary Medicine is implemented in the unit.
- The dairy unit has a herd tracking system and automatic milking system. The entire unit is monitored by security cameras 24 hours a day
- The unit has its own fertilizer mechanization system
- Manure should be collected without waiting in the stables and stored in the unit's own manure pools (200 tons capacity) for at least 3 months
- Medical waste generated during diagnosis, treatment and production must be disposed of in designated medical waste bins. These bins must be kept in sufficient numbers at remote points of the unit and disposed of weekly through a specialized medical waste company
- Sharps such as syringes, cannulas and scalpels should be disposed of in yellow boxes and new ones should be placed as they are filled.
- Natural wastes from animals (baby membranes, nails, horns, blood, etc.) should be placed in medical waste bags and treated as medical waste
- Disinfection processes in the whole unit should be determined as daily, weekly and monthly
- Personnel should be strictly monitored in terms of health status and personal hygiene
- Animals should be routinely vaccinated against IBR, BVD, Foot and Mouth Disease and Brucella
- Animals should be routinely screened for IBR, BVD, Foot and Mouth Disease, Tuberculosis and Brucella diseases
- Animals should be grouped according to their breeding type and age and kept in separate paddocks
- Calves should be kept in calf huts for the first 2-3 months, and shared colostrum and milk management should be applied after birth
- Calf sheds should be routinely maintained, repaired and cleaned

- Standard treatments in the unit should be performed by the veterinarians in charge, and in complicated cases, Fırat University Faculty of Veterinary Medicine should be consulted.
- Animals taken out of the unit should not be allowed to be brought back to the farm and animal entry from outside should be strictly prohibited. Newly purchased animals should be included in the unit after being kept in the quarantine section
- The water of the disinfectant pool at the entrance of the unit should be changed frequently. The feed unit and milking parlor, where vehicle entrances and exits are intense, are built on the outer edges of the unit.
- The unit must be closed to entry and exit of species other than cattle and humans
- Employees should change their clothes when they enter the unit and should not be allowed to walk around the unit in their daily clothes
- Students and researchers coming from outside for practicals should wear disposable clothing, gloves and boots
- All equipment used as diagnostic, therapeutic and educational materials must be specific to the unit. It should not be allowed to bring equipment from outside
- Take precautions against insects, mice and other wild animals
- Notifiable diseases should be immediately reported to official institutions and organizations.
- For feed hygiene, measures should be taken against mold and spoilage in feed production facilities
- The milking parlor must be cleaned and disinfected after each milking
- Before each milking, cows' udders should be washed with normal water and dried with disposable paper towels. *Teat deepening* should be applied to the udders before and after each milking
- The unit has a cooled milk collection tank large enough to store the milk obtained during milking
- Milk collection tank and milking equipment should be routinely maintained and disinfected
- Posters informing about biosecurity measures should be used in the unit.
- It should be forbidden to eat or drink anything during animal practices in the unit.
- When a zoonosis is suspected, the use of disposable materials such as masks, caps, gloves, goggles, goggles, clothes, etc. should be made mandatory for students and employees
- Medical waste criteria for cleanup and disposal of contaminated material should be applied more intensively

5.2. Sheep farming unit

- In case of zoonosis and/or infectious diseases, the environment and equipment should be disinfected
- Ram and sheep should be kept separate from each other. Animals should be grouped according to their age and kept in separate paddocks
- There is no milking parlor in the unit as the sheep's milk is only used for breastfeeding their lambs

- The pens are ideally designed for lighting, ventilation and disinfection
- Smallpox, Brucella and Bluetongue vaccinations of animals should be done routinely
- Animals should be routinely screened for Pseudotuberculosis, Sheep and Goat plague and Brucella
- Animals should be grouped according to their breeding type and age and kept in separate paddocks
- No animals should be allowed to enter or leave the unit from outside
- Animals such as dogs, cats and birds should not be allowed to enter the unit
- Mice, insects and other pests must be effectively controlled
- Animals are grazed on the unit's own pasture in summer. The boundaries of the pasture are closed with barbed wire to prevent animal entry and exit.
- The unit has quarantine paddocks for housing sick animals away from the normal paddocks
- Personnel should change their clothes when they enter the unit and should not walk around the unit with the clothes they wear in the external environment
- Pools of disinfectant water should be placed at the entrances of all paddocks and these should be changed at frequent intervals. Suitable disinfectants should be used for this purpose
- Disposable clothes and boots should be provided for students and researchers coming to the unit for practical courses and research.

5.3. Poultry unit

- Animals should be provided with hygienically clean feed and water
- Animals should be routinely vaccinated against CRD, *Egg Drop Syndrom* and *Gumboro*
- Animals should be routinely screened for *Newcastle*, Infectious Laryngotrachetis and avian influenza
- Provide a safe environment and healthy poultry house for disease prevention and control
- No other types of poultry should be allowed to enter the unit
- Sick and dead animals should be safely removed from the poultry house as soon as possible and necessary precautions should be taken
- Cleaning and disinfection of poultry houses and equipment should be meticulous. Appropriate disinfectants should be used for routine disinfection, but in case of any disease, agent-specific disinfectants should be selected
- Physical barriers should be built to prevent rodent and bird-borne contamination
- Disinfectant foot baths should be used for entering and exiting the unit. Bathrooms must be maintained regularly
- Biological wastes (dead animals) must be removed from the unit as soon as possible and disposed of within biosecurity rules
- Visitors must be registered and their name, surname, date and duration of visit must be recorded. Disposable overalls, caps and overshoes must be available for visitors. Students must wear white coats during educational practices.

wear a mask and overshoes. Researchers must wear unit-specific clothing and boots during the study

5.4. Equine unit

- Paddocks and all equipment used must be cleaned and disinfected regularly
- Horses showing any signs of disease should be quickly isolated from other animals
- Newly arrived horses should be quarantined for a certain period of time before coming into contact with other horses
- Feed and water sources must be kept clean and protected from contamination
- Vehicles and equipment used to transport horses (e.g. grooming equipment, feed containers) should be cleaned and disinfected regularly
- Everyone entering the barn must observe hand hygiene and use protective clothing when necessary
- All cases of illness and treatment records should be carefully kept and reported to the authorities if necessary
- Appropriate drainage and waste management systems should be in place inside and outside the facility
- It is important that all staff working in the equine unit receive regular training on biosecurity practices
- Entry of visitors and new horses must be strictly managed
- Protective clothing (aprons, boots) should be provided to visitors if necessary
- Animals should be routinely vaccinated against Equine *Herpes* Virus 1-4 and tetanus
- Animals should be routinely screened for Durin, Equine *Herpes* Virus 1-4, Equine *Viral* Arteritis and Infectious Mare Metritis

5.5. Pig unit

- The barn and its surroundings should be cleaned and disinfected regularly
- Regular disinfection of equipment, vehicles and transport equipment
- Personal protective equipment such as boots and gloves should be used and disinfected
- Newly arrived animals should be kept in quarantine for a certain period of time
- Animals showing signs of disease should be quickly isolated from others
- Regular health checks and necessary vaccinations should be done
- Entry to the barn must be strictly controlled and a visitor log kept
- Disinfectant foot baths should be used at the entrance and exit of the barn
- Ensure that employees and visitors act in accordance with biosecurity protocols
- Employees should be regularly trained on biosecurity practices and disease symptoms
- Visitors should be informed about the necessary biosecurity measures
- Clean feed and water should be used
- Fertilizers and other wastes must be regularly cleaned and disposed of properly
- Waste must be managed to reduce the risk of spreading disease

- Pests and vectors (e.g. flies, rats) must be kept under control
- Wild animals should be prevented from entering the facilities and environmental controls should be carried out
- Facilities should be designed to be easy to clean and disinfect

CHAPTER 6: BIOSECURITY RULES FOR ANATOMY DEPARTMENT

6.1. General Rules for the Department

6.1.1. Origin of animals used as cadavers

- Single clawed and ruminant animals to be used as cadavers are obtained from animal sellers or from Fırat University Veterinary Faculty Farm. Clinical examination of the animal to be used as cadaver should be performed by the Anatomy Department supervisor and the cadaver preparation process should be performed after the blood is drained from the *A. carotis comminis* under anesthesia.
- Rabbits and poultry to be used as cadavers are obtained from animal breeders. These animals should be euthanized and started to be used as cadavers after they are examined by the Anatomy Department supervisor.

6.1.2. Autopsy hall

- In this hall, only carcass parts, limbs and trunks of animals used as cadavers should be dissected. Only when deemed appropriate by the Head of the Department, cadaver parts may be taken out of the hall.
- Animals obtained from animal breeders or Fırat University Veterinary Faculty Farm should be euthanized immediately after being brought to the Anatomy Department. Animals obtained from shelters or the Department of Pathology may be brought to the anatomy department dead.

6.1.3. Departments within the Anatomy Division

- Part of the department is directly related to biosecurity measures (risk zone). These sections consist of the dissection room, the euthanasia section and the maceration room. The other part is not at risk (clean zone)
- **The clean zone includes the** osteology room, workroom, spare room, offices, laboratory, museum and secretariat. The refrigerator and freezer compartments as well as the entrance hall are considered as transition zones between the risk zone and the clean zone
- Dissections are organized weekly. Students bring their own rubber boots, latex gloves and dissection box
- Students should put on their aprons and boots as soon as they enter the dissection room and take them off and put them on the shelf immediately after leaving the risk area after each dissection. Boots and dissection instruments should be thoroughly washed and disinfected at the end of each dissection before students take them home. Used scalpels should be disposed of in yellow bins and dirty gloves in medical waste bins
- Personnel should put on their apron and boots as soon as they enter the risk area

6.2. General cleaning and hygiene

6.2.1. General disinfection protocol

- Hands must be washed and disinfected before leaving the risk area (the washing and disinfection process is illustrated on a poster). The use of latex gloves during dissection is mandatory, but this does not remove the obligation to wash and disinfect hands before leaving the risk area
- If a potentially infectious disease is suspected, students are asked to leave the dissection room after disposing of their latex gloves and gowns in a separate medical waste container. Hands, instruments and rubber boots should be washed and disinfected. If the cadaver worked on is not to be used later, it is disposed of by the staff in a special medical waste container inside the dissection room. Instruments, rubber boots and special footwear of staff, as well as tables and dissection rooms must be thoroughly washed and disinfected

6.2.2. Disinfection protocol for devices and equipment

- Dissecting instruments used by students should be thoroughly washed and disinfected at the end of each dissection week before being taken home
- Used scalpels should be disposed of in yellow bins and soiled gloves in medical waste bins.
- Dissection instruments used by staff must be washed and disinfected at the end of each dissection week and daily
- Dissection rooms should be machine and industrial detergent washed at the end of each dissection week. In addition, dissection rooms should be washed, rinsed with water and scrubbed with a brush every day
- Dissection tables should be washed daily with detergents and disinfected at the end of each dissection

6.2.4. Detergents and disinfectants used in the Department of Anatomy

6.2.4.1. Detergents and disinfectants

- For tables and floors: Chlorinated antiseptics
- For dissection materials: Quaternary ammonium compounds or chlorhexidine
- For hand washing: Liquid soap
- If a student suffers a cut during dissection, the wound should be examined and treated with appropriate antiseptics. If the wound is deep, the student should be taken to hospital for stitches
- If the wound is superficial, it should still be taken to hospital for proper wound care after dressing
- It is strictly forbidden to eat or drink anything outside the secretariat and offices in the Department of Anatomy

6.3. Selection and Acquisition of Cadavers

Only animals approved by the Department are admitted to the Department of Anatomy.

6.4. Dying animals

- Cadavers from deceased animals should be stored in the refrigerator or freezer before use. Cadaver parts stored in the refrigerator during the dissection week should be disposed of in medical waste bins at the end of the dissection week
- The refrigerator and freezer should be cleaned and disinfected regularly

CHAPTER 7: BIOSECURITY RULES FOR LABORATORIES AND NECROPSY ROOMS

7.1. Biosecurity for Laboratories

7.1.1. General rules

- Entry to the laboratory is prohibited except for authorized persons
- It is forbidden to eat, drink, smoke and keep food in the laboratory
- Do not touch eyes, skin or hair in the laboratory without washing hands
- Use a pipettor or pipettor for pipetting and do not pipette with the mouth
- Sharps such as needles, scalpel tips, slides, coverslips should be disposed of in the appropriate waste bin after use.
- In case of biological or chemical material getting into the eyes while working in the laboratory, an eye shower should be used immediately
- In case of any injury during the applications, hands should be washed before contact with the wound, then the wound should be dressed and medical support should be sought if necessary.
- It is forbidden to enter the laboratory with bags, phones, coats, accessories and jewelry

7.1.2. Personal protective equipment

- The following Personal Protective Equipment should be used before working with biological material in the laboratory
- Long-sleeved white aprons / disposable aprons should be worn in laboratories, the front of the aprons should be completely closed while working and the sleeves of the apron should completely cover the sleeves of the clothes
- Open hair and hanging pieces of clothing can pose a risk when working. For this reason, hair should be gathered and hanging pieces of clothing should be enclosed in an apron.
- Mask, bonnet, goggles and gloves should be worn when necessary
- Laboratory slippers or shoes that fully cover the feet should be worn
- Long pants or clothing long enough to cover the skin should be worn
- Gloves should be disposed of in medical waste bins and hands should be washed after removal

7.1.3. Equipment and materials

- Safety data sheets should be available in the laboratory for all chemicals.
- Calculators and pencils used in the laboratory should not be taken out of the laboratory
- Staff are responsible for disinfecting equipment used for laboratory work
- The surface of the biological safety cabinet must be disinfected after use

7.1.4. Mechanical barriers

- All handling of biological materials must be carried out using a Bunzen cloth or in a biosecurity cabinet
- All infectious, biological and chemical materials should be carried in appropriate containers in the laboratory and care should be taken in case of spillage and breakage.

7.1.5. Biological materials

- Biological samples should be kept refrigerated for the duration of the study
- Petri dishes and plastic tubes should be decontaminated and diverted to the waste system
- Students and unauthorized persons are prohibited from taking these materials out of the laboratory

7.1.6. Exit procedures from the laboratory

- The apron should be removed after the laboratory procedures are completed and the apron should not be worn outside the laboratory

7.1.7. Sterilization-disinfection-decontamination

Sterilization

- The media and materials to be used in the microbiological diagnostic and research laboratory must be sterilized. Sterilization is carried out using dry hot air (pasteur oven) or moist hot air (autoclave) depending on the type or nature of the material

Disinfection

- Work surfaces must be cleaned and disinfected before and after analysis
- The personnel in charge are responsible for the disinfection of the equipment used in the laboratory
- 70% ethanol or bleach diluted 1:10 should be used for disinfection in the laboratory

If liquid medium containing pathogenic microorganisms is spilled into the environment;

- Double layer of gloves should be worn and the liquid should be collected with an absorbent material
- After all the liquid is collected, bleach diluted at a ratio of 1:10 should be poured onto the last absorbent material and wait for 20 minutes.
- If there is a broken glass material, the pieces should be carefully collected with forceps and disposed of in the sharps waste container
- At the end of the procedure, first layer gloves and used absorbent materials should be disposed of in the medical waste bin
- After all procedures are completed, the lab coat should be removed and hung in a suitable place. After removing the second layer of gloves, hands should be washed with soap.
- Laboratory supervisor should be informed

Decontamination

- Microorganism culture wastes and biological samples resulting from laboratory procedures should be decontaminated in an autoclave. Biological wastes should not be removed from the laboratory without decontamination
- After decontamination, biological wastes should be placed in red colored plastic bags marked "Medical Waste".

- When 75% of the medical waste bags are full, they should be handed over to the personnel in charge of medical waste transportation

7.1.8. Waste management

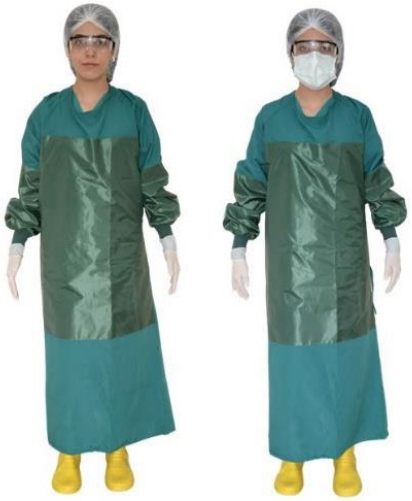
It should be carried out according to Fırat University Faculty of Veterinary Medicine Waste Management Guide.

7.2. Necropsy area biosecurity rules

- Since the necropsy hall is an area with a high risk of infection, students and staff who will participate in necropsy should take personal protection measures.
- When it is determined that the animal to be necropsied does not carry zoonotic risk by making a risk assessment, routine necropsy should be performed. In case of zoonosis risk, necropsy should be performed in a separate section and additional personal protective measures should be taken.
- The main risky diseases for necropsy workers are rabies, tuberculosis, brucellosis, anthrax and ruam

7.2.1. Standard precautions for necropsy

- Always wear personnel protective equipment when conducting necropsy and biological specimen collection procedures
- Fluid-resistant gowns or coveralls should be used for necropsy
- Always wear latex or nitrile gloves and replace gloves when damaged. Cut-resistant gloves should be used when using cutting tools
- Protective goggles should be worn when performing non-infectious animal necropsies, and face shields should be worn for autopsies where there is a risk of exposure to zoonotic disease or other hazards
- Waterproof disposable boots or rubber boots should be worn during necropsy
- For procedures that may generate biological or chemical aerosols, masks should be worn to avoid the risk of zoonotic disease or exposure to hazardous chemicals
- Necropsy areas should be disinfected after the procedure
- General cleaning practices should be performed before disinfection
- The disinfectant used must remain on the surfaces and must not be washed off
- Cadavers and large pieces of tissue should be placed in a medical waste bag and placed in cold storage
- Hands should always be washed thoroughly with soap and water after removing personal protective equipment and before leaving the necropsy area



The necropsy area consists of 4 different sections

These sections are;

- Staff and student login
- Hol
- Necropsy hall
- Cadaver entry

Also;

- Students should put their personal belongings in lockers and wear disposable aprons and boots
- After passing through the hall, it should enter the necropsy hall with a disinfectant foot bath at the entrance.
- Faculty staff and students should be informed about how to use these areas

7.2.2. Waterproof transport boxes

- Cadavers are transported in forklift-compatible waterproof transport containers
- Cadavers should be recorded at the entrance of the necropsy hall and stored in cold storage by the staff.
- Containers and forklift wheels must be washed and disinfected

CHAPTER 8: BIOSECURITY RULES FOR IMAGING CENTERS

8.1. General principles

- If radiological treatment is necessary for animals with suspected infectious diseases, the procedure should be performed at the end of the day
- The clinician is responsible for informing the staff in the imaging department and implementing the necessary procedures to prevent the transmission of infectious agents
- If the examination cannot be left until the end of the day (such as a surgical operation), the examination room and instruments should be cleaned and disinfected after the examination by taking the necessary protective measures.
- If there is a risk of infectious diseases in radiography, ultrasonography and tomography rooms, they should not be used until they are disinfected.
- Ultrasonography probes should be protected in disposable gloves. Probes and cables should be carefully disinfected after the examination. Ultrasonography pads used for cats and dogs should be kept in a plastic bag and wrapped in a waterproof cover. Waste should be disposed of in medical waste bins
- Paper towels, gloves, disposable clothing, urine and feces used to dry animals and instruments should be treated as medical waste
- The ultrasonography device must be used with the user's clean hand or by another person who has no contact with the patient. When imaging animals in the infectious diseases unit of the Large Animal Clinic, the device should be kept in the corridor and the device should not be brought into the paddocks. The wheels of the device must be disinfected after the examination. Only necessary materials should be taken into the unit. Alcohol and gels used for ultrasonography should be kept on the unit.
- The hands of the person performing the radiology examination must be washed in every case, regardless of the patient's infectious status
- Staff and students must wear disposable gowns and gloves when handling patients
- All persons who come into contact with the patient should wash their hands thoroughly when the procedures are completed
- The number of people participating in the screening exercise should be limited as much as possible
- All staff and students working in the radiation field must wear radiation protective clothing and a personnel badge
- Lead aprons and gloves should be cleaned with disinfectant sprays after known or suspected cases of infectious diseases